

**WORKING PAPER  
DEPARTMENT  
OF ECONOMICS**

*The Palestinian Labor Market Between the  
Gulf War and Autonomy*

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**No. 98-05**

**May 1998**

**MASSACHUSETTS  
INSTITUTE OF  
TECHNOLOGY**

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# THE PALESTINIAN LABOR MARKET BETWEEN THE GULF WAR AND AUTONOMY\*

by,

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MIT and NBER

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\*This study is part of the Project on Palestinian Refugees at Harvard University. I thank the Project for financial support and the project organizers, George Borjas and Dani Rodrik, for their comments. Thanks also go to Jon Guryan and Samer Haj Yehia for research assistance. The data used here are available from the Hebrew University Social Science Data Archive.



### Abstract

The early 1990s were an eventful time in the Middle East. Key events include the Gulf War, the Madrid peace conference, and the introduction of Palestinian autonomy in all of the Gaza Strip and in most West Bank population centers. This period also provides the last chance to look at economic conditions in the territories through the lens of the long-running Israeli survey program, which ended with the transfer of civil authority to the Palestinians. I use the Israeli survey data to describe labor market conditions in the territories on the eve of autonomy. Special attention is given to the impact of changing employment opportunities for Palestinians in Israel and to the situation of Palestinian refugees. Policy implications of the findings are discussed.



## I. Introduction

The 1991 Gulf War marked a low point in Palestinian political and economic fortunes both in the territories and abroad. By 1994, however, the Gaza Strip and the West Bank town of Jericho had been turned over to the newly created Palestinian Authority (PA). In 1995, Palestinian cities and towns in the West Bank were also gradually brought under PA control, although the final economic and political relationship between Israel and the PA is still being negotiated. One of the most important unresolved issues is how the flow of Palestinian labor to Israel will be regulated or even if it will continue at all. The years 1991-95 were a period of repeated sharp restrictions on Palestinian access to the Israeli labor market, and, in some cases, on the flow of goods to and from the territories (Israel Employment Service, 1996). These restrictions were in response to events such as the Hebron massacre and terrorist attacks in Israel, sources of variation in economic contacts that need not characterize the Israeli-Palestinian relationship indefinitely. In the mean time, it is possible to use the experience of these years to better understand how the Palestinian and Israeli labor markets interact.

In three earlier papers (Angrist 1992, 1995, 1996), I described a number of important changes in Palestinian wage and employment patterns since 1981. Angrist (1996) shows that the daily wage premium for working in Israel fell from roughly 18 percent in 1981 to zero in 1984. Beginning in 1986, however, the Israel wage premium rose steeply. By 1989, daily wages paid to Palestinians working in Israel were 37 percent higher than local wages, nearly doubling the 1987 wage differential. The monthly wage premium for working in Israel increased similarly. These changes parallel the pattern of Palestinian absences from work, and are consistent with movements along a fairly inelastic Israeli demand curve for Palestinian labor. The Israeli elasticity of demand for Palestinian labor was estimated by using supply shocks that originate with security curfews as instrumental variables. IV estimates of demand equations are somewhat sensitive to the details of model specification, but the best-fitting models consistently suggest that the observed covariance between Palestinian wages and days worked can be rationalized by a short-run Israeli elasticity

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of demand for Palestinian labor ranging between -1 and -2.

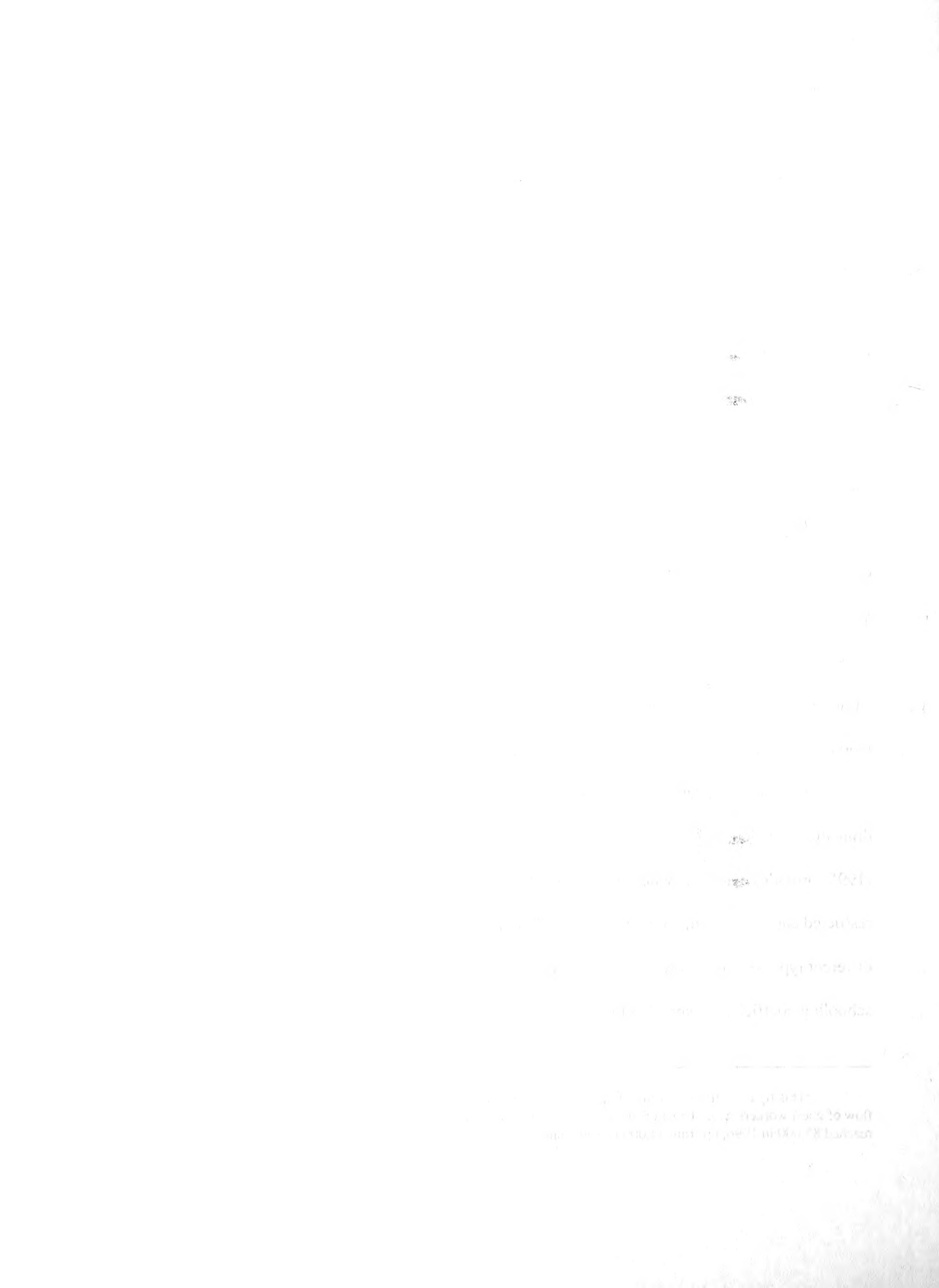
These results suggest that labor market policies in the territories should be analyzed in light of the possibility that Israeli demand for Palestinian labor may be inelastic enough to considerably dampen the earnings loss from reduced access to the Israeli labor market, at least for a while. On the other hand, higher Palestinian wages and an uncertain supply create a strong incentive for Israeli employers to develop alternative labor resources. Israel's increasing use of non-Palestinian guest-workers to fill positions vacated by Palestinians is an attempt to develop such resources. Recent reports suggest that the Israeli labor force now includes as many as 250,000 guest workers from Europe and Asia.<sup>2</sup> To put this figure in perspective, note that the number of Palestinians working in Israel was probably never more than 120,000 at any one time; official statistics indicate between 100-110 thousand workers (Angrist, 1996). Another relevant piece of background information is that in 1995, the entire male civilian labor force in Israel numbered only about 1.2 million (Israel Central Bureau of Statistics, 1996).

In light of these recent changes, it seems natural to ask whether it is still true that the earnings consequences of negative demand shocks are moderated by inelastic Israeli demand. Or are changes in earnings now proportional to changes in days worked? More generally, what has been the effect of guest workers on Palestinian wages? This is the first set of issues discussed here.

Another important change in the Palestinian labor market that I noted in earlier work was a dramatic reduction in the wage premia paid to more educated workers between 1981 and 1987. Angrist (1995) provides evidence which suggest that large shifts in the supply of educated workers combined with restricted capital investment explain this decline in returns to schooling. Angrist (1992) also shows that different types of workers were employed in Israel at different times, which suggests that these changes in schooling coefficients may reflect worker heterogeneity. But the panel data estimates reported in Angrist

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<sup>2</sup>This figure is from a recent article in the Hebrew daily *Maariv* (1996). A possible alternative rough indicator of the flow of guest workers might be had from the number of "temporary residents" (a visa classification) entering Israel. This figure reached 85,000 in 1996, up from 44,000 in 1995, and 18,000 in 1993 (Israel Central Bureau of Statistics, 1996; Table 4.1).



(1995) show that sharp declines in the returns to schooling are apparent even after allowing for individual heterogeneity. The second issue I look at here is whether the returns to schooling have recovered in the more recent period, perhaps in response to the expectation of increased opportunities for the utilization of human capital under the autonomy regime.

Finally, in addition to updating earlier results on the returns to schooling and the impact of supply shocks on wages, the third issue discussed in this paper is the economic condition of Palestinian refugees who live in the West Bank and Gaza Strip. The TLFS micro data sets for 1992-95 identify people who resided in Israel in 1948 and people whose father resided in Israel in 1948. These people are refugees and the children of refugees. Information on refugee status is used to estimate and characterize the refugee/non-refugee wage and employment gap since 1992.

## II. Data and descriptive statistics

### *The TLFS*

In 1967, the Israel Central Bureau of Statistics (CBS) conducted a population Census in the West Bank and Gaza Strip which was used as a sampling frame for quarterly labor force surveys in the territories. The sampling frame was periodically updated to reflect migration and new construction. Because of the TLFS rotation group design, each surveyed household was interviewed four times. TLFS interviews were conducted by local Palestinian enumerators employed by the Israeli Civil Administration in the territories. The last survey interviews in the Gaza Strip were conducted in the first quarter of 1994; the last interviews in the West Bank were conducted in the third quarter of 1995.

The sample used here contains observations on men aged 18–64. Basic descriptive statistics and sample sizes are reported in Table 1 for selected years through 1989 and every year from 1991-1995. Roughly 30-39 thousand interviews were conducted each year until 1994 when the Gaza survey ceased. The fraction of the sample residing in the Gaza strip fluctuates from a high of 27 percent in 1981–84 to a

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low of 22 percent in 1988. The mean age of men in the sample is stable at about 33.

Approximately half of the men in the sample are wage laborers, the remainder being mostly self-employed (including work on a family farm or business), unemployed, or in school. Wage laborers constitute 2/3 of the labor force, with participation rates ranging from 72 to 82 percent. The fraction of men in the labor force who were employed in Israel or Jerusalem is shown in the last column of Table 1. This ranges from 37-39 percent until 1993, when it drops sharply, to 32 percent. The lower half of Table 1 shows that workers from the territories who are employed in Israel and Jerusalem are concentrated in semi-skilled and unskilled jobs, and in the construction and agriculture industries. For more on this point, see Kleiman (1992) and Semyonov and Lewin-Epstein (1987). Table 1 also shows that the average schooling level in the sample rose from 7.7 years in 1981 to 8.7 years in 1991, and then continued to rise to over 9 years in 1993.

For the purposes of this paper, I define a first-generation refugee to be someone who lived in 1948 in the State of Israel. A second-generation refugee is someone whose father lived in the State of Israel in 1948. These definitions correspond to the information collected in the TLFS. Estimates not shown in Table 1 indicate that in 1992 and 1993, the last years when complete surveys were done in both the West Bank and Gaza Strip, about 5 percent of the men in the extract were first-generation refugees and about 23 percent were second-generation refugees. Weighting this by CBS sampling weights increases the proportion of second generation refugees to 30.5 percent. The proportion of refugees is much higher in the Gaza Strip than in the West Bank. About 54 percent of Gazans are estimated to be second generation refugees and 8 percent are first generation refugees. The corresponding figures for the West bank are 16 and 3 percent, respectively.

The usual types of sampling and non-sampling errors in labor force surveys are also present in the TLFS. In addition, data collection after 1988 became more difficult because of civil disturbances in the territories that were part of the Palestinian uprising or Intifada. Because TLFS data on the territories were



collected by employees of the Israeli civil administration, these data may be less accurate than data from comparable labor force surveys carried out elsewhere. Moreover, although there are many sensible patterns in the TLFS data on labor force status (e.g., seasonality; see Angrist, 1996), data on wages are often poor even in the best circumstances.

As a check on the TLFS data, Table 2 reports estimates of average wages from the first two waves of the Palestinian Labor Force Survey (PLFS), which was conducted in the third quarter of 1995 and the second quarter of 1996.<sup>3</sup> Average PLFS wages in 1995 were 35 shekels for residents of the West Bank employed locally (including Jerusalem), 27 shekels for residents of the Gaza Strip employed locally, and 49 shekels for Palestinians employed in Israel (excluding Jerusalem). Estimates from the TLFS in the second quarter of 1995 are about 31 for Palestinians employed in the West Bank or Jerusalem and 51 shekels for Palestinians employed in Israel. The most recent Israeli wage data for Gaza is from the first quarter of 1994; when the average wage is estimated to have been 26 shekels. So the PLFS and the TLFS data seem to generate estimates that are in the same ball park.

There were no Israeli surveys in the territories in 1996. The PLFS data show a big drop in wages at all locations between 1995 and 1996. This drop is probably due to the disruption of economic activity following the November 1995 Rabin assassination, the early 1996 bus bombings in Israel, and the subsequent closure and quarantine of the territories until the elections in May.

### *Graphical analysis*

After an initial decline during the Palestinian uprising, the proportion of Palestinians working in Israel fell sharply in 1993, largely as a consequence of an increasingly restrictive access policy enforced by Israel. The change in probability of working in Israel can be seen in Figure 1, separately for residents of

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<sup>3</sup>These estimates were derived from Palestinian Central Bureau of Statistics (1996a, b). The introduction to these reports suggests an effort has been made to maintain some comparability with the Israeli surveys, although the PLFS results are sometimes reported on a different basis.





the West Bank and Gaza Strip. Recent changes in employment rates can be seen in Figure 2, which plots employment/population ratios. These also fell sharply in early 1993, but recovered very quickly in the Gaza Strip to levels not substantially different from those prevailing during the preceding years. West Bank employment rates also seem to have recovered by the end of 1995. On the other hand, unemployment rates, which are affected by movements in and out of the labor force, stayed higher after early 1993 than they had been previously, especially in the West Bank. This can be seen in Figure 3. The most recent TLFS unemployment data show rates around 4 percent in the Gaza Strip and around 7 percent in the West Bank.<sup>4</sup>

Figure 4 plots average days worked by region of residence.<sup>5</sup> Like the employment data, this figure also shows a sharp drop in 1993 that was almost as large as the Gulf War drop. Subsequently, average days worked seem to have returned to the 18-19 day level prevalent during the Intifada period. Figure 5, which plots average days worked by work location, shows that reductions in average days worked continued to be most severe for those employed in Israel or Jerusalem. In contrast, average days worked appear to have been on a gradual upward trend for those employed locally.

In recent years, the pattern of fluctuations in monthly wages largely mirrors the fluctuations in days worked, although it is somewhat less volatile. This can be seen by comparing Figure 6, which plots monthly wages by work location, with Figure 5. I have also confirmed this by comparing quarter-to-quarter changes in average days worked and average monthly earnings. This comparison shows that in recent years at least, changes in days worked occurred at roughly constant real (daily) wage rates. The fact that changes in monthly wages are roughly parallel to changes in days worked is important because this implies that fluctuations in days worked are not associated with changes in wages.

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<sup>4</sup>The TLFS labor force status recode from which the unemployment rate is constructed uses “actual status” definitions similar to those used in the CPS.

<sup>5</sup>Figures that plot information by region of residence show averages for all workers who live in the region, regardless of work location. Figures that plot information by work location show averages for all workers employed at that location, regardless of region of residence.



The real wages of Palestinians increased steeply from 1985 to 1989, fell from 1989 to 1991, and fell again in 1993. This can be seen in Figure 7, which plots average daily wages by work location. This figure also shows that the wages paid to Palestinians employed in the West Bank were more or less flat in the first half of the 1990s and declining in Gaza. But wages paid to Palestinians working in Israel or Jerusalem exhibit an increasing trend from 1991-95. Only in 1995 do wages paid to Palestinians working in Israel turn down again, for the first time since 1991 (except for first quarter 1993). Note, however, that the increase in wages paid to Palestinians working in Jerusalem is somewhat more gradual after 1992.

### *Interpretation*

The years 1992-95 were marked by extended and repeated interruptions in the flow of Palestinian migrant labor to Israel. In 1992, 1993, and 1994, there were periods when large numbers of people were under curfew, as in the Intifada years. It is also important to note that Israel increasingly imposed closures on the territories instead of curfews, so that curfews were not the only or even the most important source of supply shocks. There were total closures of the territories in April 1993, February 1994, April 1994, October 1994, January 1995, July 1995, August 1995, and September 1995 (Israel Employment Service, 1996). The closures lasted from one week to up to two months, during which time few and sometimes no Palestinians were allowed to work in Israel or Jerusalem.

During the Intifada years (roughly 1988-91), exogenous supply shocks were associated with an increase in daily wages. This wage response partly offset the decline in earnings from fewer days worked, so that earnings were less variable than wages. The fact that earnings appears to be about as volatile as wages in the more recent period suggests that Israeli employers are no longer as dependent on Palestinian workers as they used to be. It should be noted, however, that the period discussed here largely predates the massive inflow of guest workers to Israel, which probably did not begin in earnest until 1995. The apparent insensitivity of wages to fluctuations in days worked may therefore reflect a structural and



perhaps long-lasting change in the Palestinian-Israeli employment relationship.

Real wages earned by Palestinians working in Israel increased substantially over most of the 1992-95 period, only beginning to decline in 1995. The growth in wages paid to Palestinians working in Israel probably reflects post Gulf War economic growth in Israel. On the other hand, the decline in Palestinian wages in 1995 may indeed be due to competition with the guest workers since the Israeli economy continued to grow in that year. In contrast with the decline in Palestinian wages between 1994 and 1995, Israeli citizens enjoyed real wage growth of about 2 percent over this period (Israel Central Bureau of Statistics, 1996; Table 12.24). It is also worth noting that in 1992 and 1993, when the wages paid to Palestinians working in Israel and Jerusalem were still increasing, the wages of Israeli citizens were essentially flat.

### III. Regression estimates and changes in schooling coefficients

This section uses regression models to show that the pattern in relative wages seen in the figures is apparent after controlling for basic demographic characteristics, and to look at recent changes in the returns to schooling. Table 3 reports the results of estimating the following equation (computed by weighted least squares using CBS sampling weights):

$$\log(w_{it}) = \delta_{qt} + x_{it}\alpha_{0t} + x_{it}^2\alpha_{1t} + \sum_c a_{ic}\beta_{ct} + \sum_g b_{ig}\gamma_{gt} + f_i\theta_t + C_i\lambda_t + J_i\psi + u_{it}, \quad (1)$$

where  $\delta_{qt}$  is a quarter effect in year  $t$ ,  $a_{ic}$  is a dummy variable that indicates if  $i$  is in age group  $c$  and  $\beta_{ct}$  is an age effect in year  $t$ ,  $b_{ig}$  is a dummy variable indicating if  $i$  is in schooling group  $g$  and  $\gamma_{gt}$  is a schooling effect in year  $t$ ,  $f_i$  is a dummy variable indicating if  $i$  works in Israel in year  $t$  and  $\theta_t$  is a work-in-Israel effect in year  $t$ ,  $C_i$  is a dummy variable indicating if  $i$  lives in an urban area and  $\lambda_t$  is a city effect in year  $t$ ,  $J_i$  is a dummy variable indicating work in Jerusalem and  $\psi$  is a work-in-Jerusalem effect.<sup>6</sup> The term  $x_{it}\alpha_{0t} + x_{it}^2\alpha_{1t}$  is a time-varying quadratic function of potential experience (that is,  $x_{it} = \text{age}_{it} - \text{years of}$

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<sup>6</sup>The age groups indexed by  $c$  are: 25–34, 35–44, 45–54, 55–64. The schooling groups indexed by  $g$  are: 13–15 years, 16 or more years.

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schooling<sub>it</sub>-6).

Column (1) of Table 3 reports estimates of the daily wage premium for working in Israel by region of residence. The premium fall sharply from about 20 percent in 1981 to -.03 for residents of Gaza in 1984, and to .056 for residents of the West Bank in 1984. The Israel premium rose sharply after that, to .25 for Gaza residents in 1987 and to .20 for West Bank. The increase continued every year from 1991 to 1994 at both work locations. In fact, the 1992-1995 wage premium for work in Israel was larger than it has ever been. The 1995 premium was about 50-60 percent for Palestinians from both locations.

The schooling coefficients shown in Table 3 decline monotonically until 1991 for residents at both locations, and continued to decline in the West Bank thereafter. But beginning in 1992, the returns to schooling began to increase substantially for residents of the Gaza Strip. The returns to a college degree also increased in 1995 for residents of the West Bank. This turnaround may reflect an inflow of investment and the increase in civil service and administrative jobs generated by the autonomy process. PA administrative activities were concentrated in the Gaza Strip during this period, although the increase in the returns to schooling in 1993 in Gaza pre-dates the official beginning of autonomy there.<sup>7</sup>

Finally, note that in contrast with the specification reported here in Table 3, potential experience was not included in the models reported by Angrist (1995) because exact years of schooling are poorly measured. But the specification used here is otherwise identical to the ones I used earlier. Including potential experience necessarily raises the estimated returns to schooling but has little effect on cross-period comparisons. This can be seen in the second panel B of Table 3, which reports estimates of equation (1) when the potential experience quadratic is dropped (and age dummies are retained).

#### IV. Changes in Refugee/non-Refugee wage differentials

Table 4 reports estimates of differences in daily wages between refugees (men who residing in the

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<sup>7</sup>The Declaration of Principles was signed in September 1993 and the Gaza/Jericho withdrawal was completed in May 1994. The preparatory transfer of power in other areas was completed in December 1994.

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State of Israel in 1948), the children of refugees (men whose fathers resided in the State of Israel in 1948), and other Palestinians. Refugee effects in models without controlling for covariates (other than period effects) were computed by estimating:

$$\log(w_{it}) = \delta_{qt} + R_{1it}\phi_{1t} + R_{2it}\phi_{2t} + v_{it}, \quad (2)$$

where  $R_{1it}$  is a dummy for refugees and  $R_{2it}$  is a dummy for the children of refugees, and  $\phi_{1t}$  and  $\phi_{2t}$  are the corresponding refugee effects. Estimates with covariates were produced by adding  $R_{1it}\phi_{1t} + R_{2it}\phi_{2t}$  to equation (1).

In 1992 and 1993, refugees earned less than non-refugees in both the West Bank and Gaza Strip. The 1992 refugee wage gap was about 8.5 percent in Gaza and 15.7 percent in the West Bank. The 1993 refugee wage gap was about 4.5 percent in Gaza and 15.3 percent in the West Bank. Adding covariates to the model (including controls for work location) reduces the gap in both years to less than 2 percent in the Gaza Strip, an amount less than the standard error of the estimates. Including covariates also reduces, but does not eliminate, the gap in the West Bank. The covariates-adjusted gap between refugee and non-refugee wages in 1992 and 1993 was around 8-11 percent.

Unlike first generation refugees residing in the Gaza Strip, who earned less than other Palestinians when covariates are not taken into account, men whose fathers were refugees earned no less than other men in the Gaza Strip in 1992 and 1993. This appears to be the case with and without controlling for covariates. In the West Bank, however, the wage gap for first and second generation refugees is about the same when estimated with or without covariates. The wage gap between second generation refugees and other Palestinians in the West Bank is also largely unaffected by control for covariates.

From 1992-1995, the raw refugee wage gap in the West Bank fell from -.16 to -.05. This is apparently due in part to changes in personal characteristics. Controlling for covariates, the gap shrinks much less. The 1995 gap for second generation refugees in the West Bank is also smaller than in earlier years. So the overall pattern suggest that refugee wage gaps have been closing. The data for residents of



the Gaza Strip actually show an interesting turnaround in 1994, with refugees earning substantially more than other Palestinians in that year. But this may be an anomalous result which reflects the fact that the 1994 survey in Gaza was conducted in the first quarter only. Also, the 1994 interviews in Gaza were the last before the Israeli survey program ended there, and this quarter marks the transition from Israeli to Palestinian authority.

Table 5 reports estimates for employment similar to those reported in Table 4 for wages. The employment models with covariates do not control for work location since some men do not work. The story here is similar in many respects to that for wages. When comparisons are not adjusted for covariates, refugees residing in both the West Bank and Gaza Strip are much less likely to be working than other Palestinians. But adjusting for education, age, urban residence, and potential experience accounts for much of the first generation refugee employment gap, especially in the Gaza Strip. Controlling for covariates also reduces the refugee employment gap for residents of the West Bank, although the adjusted gap remains substantial. Second-generation refugees in both the West Bank and Gaza Strip have lower employment rates than other Palestinians, with and without adjusting for demographic characteristics. One difference between the results for wages and employment is that, unlike the wage gap, which appears to have been shrinking, the employment gap does not appear to have changed systematically in the 1992-95 period.

## V. Summary and policy discussion

### *Summary*

Three important characteristics of the Palestinian labor market are the wage premium for working in Israel, the economic returns to schooling, and the refugee wage and employment gaps. For most of the period since 1991, the wages of Palestinians employed in Israel were rising, while local wages were flat. The (log) premium for working in Israel in 1992-95 reached 50 or 60 percent as the Israeli economic



situation improved while that in the territories did not. Recent changes in monthly earnings have been roughly proportional to changes in days worked, suggesting that labor supply shocks did not induce a change in wage rates. Moreover, in 1995, the wages of Palestinians employed in Israel appear to have begun to fall. In the past, negative labor supply shocks were associated with increasing wages, which served to dampen the consequences of these shocks for earnings and offered evidence of Palestinian market power in the market for construction and agricultural workers. Overall, the new findings suggest that the dependence of Israeli employers on Palestinian labor has now been reduced, perhaps because of guest workers, sectoral shifts, or substitution in favor of capital or local labor. The question of whether the new situation is permanent or transitory remains open.

Other findings suggest that the returns to schooling in the Gaza Strip began to recover after a sustained decline, although there is still a long way to go before the returns on human capital reach their pre-Intifada levels. On the other hand, educated workers in the West Bank still receive almost no premium for their schooling. Together, these findings suggest that new employment opportunities for skilled Palestinians have been concentrated in the Gaza Strip. Perhaps a change in opportunities will also come to the West Bank, once the Palestinian political infrastructure there is more established.

The last set of relationships looked at here are refugee/non-refugee contrasts. Like Pedersen (1996), I do not find dramatic differences in labor market conditions by refugee status, at least in the Gaza Strip. On the other hand, there are some important differences, especially for residents of the West Bank. Refugees and the children of refugees in the West Bank have lower wages and lower employment rates than other Palestinians, although the refugee wage gap appears to have been declining. As late as 1995, however, the adjusted refugee wage gap in the West Bank was about 7 percent, while the employment gap was 4-6 percent. The adjusted employment gap in the Gaza Strip in 1994 was about 7 percent.

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### *Implications for access policy*

Structural economic changes are almost by definition long-lasting. If a structural change in the Israeli labor market has occurred, then the Palestinians should probably not count on returning to an arrangement that allows large numbers of migrant workers to commute to work each day in Israel. On the other hand, if the new relationship between Palestinians and Israeli employers has developed because the Palestinians have been replaced by guest workers, prospects for a reversal seem better. Israeli policy makers and many commentators (see, e.g., Maariv, 1996) appear to be uncomfortable with the notion of a permanent guest worker population; Palestinian workers, at least, do not aspire to Israeli citizenship and for the most part return to their homes in the West Bank and Gaza Strip every evening. This is a remarkable and perhaps even unique feature of Palestinian labor migration.

The question remains whether either Israelis or Palestinians should look to an increase in the number of Palestinians working in Israel as a desirable outcome. The large wage premium now enjoyed by Palestinians employed in Israel must surely be attractive to workers. And even at these wages Israeli employers benefit from low cost employees who are, in many cases, highly skilled and productive. Moreover, little premium apparently need be paid for more educated Palestinian workers. On the other hand, employment of workers from the territories involves substantial transaction costs on both sides. For the workers, employment in Israel involves long commutes even though distances are short (see, e.g., Angrist, 1996), as well as arbitrary search and seizure, risk of personal attack, and lockouts in response to attacks or as a consequence of local quarantines and curfews. Employers pay a price in terms of uncertainty and employee absences, sabotage, and the risk of personal attack.

In addition to these considerations, data from other countries show that while international economic integration has increased, migrants from developing countries to industrialized countries (an analogy appropriate in the Israeli case) constitute only a modest proportion of the world stock of migrants. In a recent study of labor in the world economy, Bloom and Brender (1993) note:





"World economic integration has proceeded even though international labor mobility has not increased in recent decades . . . Developed country governments generally do not encourage international migration and often inhibit it through the imposition of various legal or financial barriers . . . limitations on the physical mobility of labor, however, have not prevented the emergence of a global market for labor services as services can be exchanged in a variety of ways that do not require the physical proximity of buyers and sellers."

This suggests that there are a variety of economic and social factors that limit the benefits from migrant labor.

In fact, the experience of developed countries around the world who have employed migrant labor at one time or another has been mixed. Recent examples of non-citizen labor in developed countries include US employment of Mexicans, German employment of Turks, Western European employment of citizens of Southern and Eastern European nations, and Malaysians employed in Singapore. In each of these cases, pressure has been generated for change in one or both of the following directions: (1) Granting the full range of civil rights and social benefits to migrant workers, with the possibility of eventual citizenship. A leading example is the situation of long-time resident Turkish guest workers in Germany; (2) Substitution of capital mobility for labor mobility. An example here is the recent flow of capital and manufacturing from Hong Kong to Southeastern China.

Recent American experience is especially interesting because it reflects moves in both directions. On one hand, under the 1990 Immigration Reform and Control Act, illegal aliens who have been in the country from a long time can in some cases apply for amnesty and permanent residence. On the other hand, efforts have been made to encourage American firms to set up establishments on the Mexican side of the Rio Grande. In addition to low labor costs and proximity to American markets, a key component of this program is the Offshore Assembly Provision of the US tariff schedule which stipulates that products



assembled or processed abroad with US parts are levied an import duty (to the US) only on the foreign value added. The Mexican government originally promoted US offshore assembly to offset job losses when the US closed down a program that permitted seasonal entry of Mexican farm workers (Mendez, Murray, and Rousslang, 1991).

An analogous “offshore assembly” effort for Israel would be to promote Palestinian industry and agriculture in the territories, integrated with Israeli distribution and marketing, as an alternative to labor migration. This process will probably develop faster if Israeli employers do not have the option of employing Palestinians or foreign guest workers in Israel. In the past, Israeli policy makers seem to have found local Palestinian economic development a threatening prospect but lessons from other countries suggest that this need not be the case. Some of the features that make Gazan labor attractive to Israeli employers apply equally well to the employment of Gazans in Gaza using Israeli and other foreign capital. Recent research on the determinants of foreign direct investment also suggests that for developing countries, infrastructure, stable international relations, rapid industrial development, and an expanding domestic market are the factors most important for attractive capital from abroad -- more important even than tax concessions and low labor costs (Wheeler and Mody, 1992).

### *Two other policy issues*

I conclude with a brief discussion of the policy implications of the two others sets of findings reported here. My study of the returns to schooling (Angrist, 1995) in the territories discussed possible political reasons for the decline in economic returns on human capital. In fact, the returns on human capital have begun to recover for workers who live in the Gaza Strip, possibly because of autonomy. On the other hand, the returns to schooling remain had not yet turned around in the West Bank as of 1995. In the near term, the Palestinian leaders may want to consider efforts directed at reducing the imbalance in returns to human capital, either by changing the geographic distribution of public sector employment or by



making investment in the West Bank more attractive. Of course, the success of such efforts depends on a range of external factors that are impossible to control.

Finally, the results for refugees suggest that refugees who reside in the West Bank and Gaza are only moderately worse off than other Palestinians. A similar conclusion was reached recently by Pedersen (1996). While the results reported here show that refugees have somewhat lower wages and employment rates than non-refugees, the wage gap is closing and the employment differences are not dramatic. This suggests that resources devoted to further integrating refugees into the local Palestinian economy may be most effective if they are focused on improving schools and physical infrastructure and on boosting the overall macro economy, as opposed to programs of targeted subsidies and transfers.



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TABLE 1 — DESCRIPTIVE STATISTICS

Year	Sample size	Age	Gazans	Years of schooling	Labor-force participation	Wage worker	Days worked per month	Work in Israel (and Jerusalem)
1981	29,622	33.2	0.27	7.65	0.72	0.48	22.0	0.37
1984	32,735	33.2	0.27	8.07	0.76	0.48	22.0	0.39
1987	39,221	32.8	0.25	8.36	0.81	0.52	22.4	0.39
1989	35,921	32.8	0.22	8.49	0.82	0.51	18.3	0.38
1991	34,138	32.9	0.23	8.65	0.82	0.50	17.4	0.38
1992	39,234	32.9	0.23	8.83	0.83	0.52	19.7	0.39
1993	39,507	32.9	0.22	9.02	0.82	0.50	17.69	0.32
1994	33,534	32.6	0.06	9.14	0.83	0.50	18.1	0.27
1995	24,615	32.4	0.00	9.29	0.85	0.51	19.31	0.23

<i>Distribution of Labor Force by CBS Occupation Code</i>									
Employed Locally					Employed in Israel (including Jerusalem)				
0-2	3-5	6	7-8	9	0-2	3-5	6	7-8	9
1981	11.3	27.0	19.9	31.0	10.9	13.0	9.9	31.6	44.3
1984	12.3	27.8	18.6	29.8	11.5	13.9	12.1	28.4	44.5
1987	11.9	26.9	18.8	31.2	11.1	16.1	12.3	29.1	41.0
1989	10.9	27.1	19.8	30.4	11.7	16.0	11.0	27.5	44.1
1991	10.4	26.1	21.0	31.1	11.4	9.8	9.9	28.3	50.8
1992	11.1	25.8	20.3	31.8	11.0	7.9	7.7	33.2	50.0
1993	9.8	25.3	19.4	33.9	11.6	7.9	8.5	40.9	41.3
1994	8.5	23.1	19.4	34.0	15.0	10.2	10.0	37.3	40.5
1995	8.3	21.6	18.4	32.3	19.4	10.3	9.1	35.0	43.5

Notes: The sample includes men aged 18-65. Because of the sample design, only one quarter of the sample observations are statistically independent. Statistics in the table are unweighted counts. The Israel CBS one-digit occupation codes are scientific, academic professional, technical, administrative, managerial (0-2); clerical, sales, service (3-5); agricultural (6); skilled worker in industry, mining, construction, transport, or other sector (7-8); unskilled worker, other industrial worker, transportation (9).



TABLE 2 — AVERAGE DAILY WAGE IN 1991 NIS AS REPORTED IN THE PALESTINIAN LABOR FORCE SURVEY

	All Regions	West Bank	Gaza Strip	Israel (and Settlements)
1995	37.0	34.9	26.6	49.3
1996	27.5	26.7	22.4	40.8

Notes: Wages are for men only. Values are deflated to first quarter 1991 NIS. 1995 values are from the third quarter, 1996 values are from the second quarter.



TABLE 3 — WAGE DETERMINANTS

Year	Gaza			West Bank		
	Work in Israel (i)	13-15 years schooling (ii)	16 or more years schooling (iii)	Work in Israel (i)	13-15 years schooling (ii)	16 or more years schooling (iii)
A. Controlling for potential experience						
1981	.191 (.013)	.384 (.030)	.426 (.031)	.227 (.009)	.287 (.018)	.522 (.023)
1984	-.031 (.013)	.321 (.024)	.461 (.025)	.056 (.008)	.202 (.015)	.407 (.019)
1987	.251 (.011)	.083 (.022)	.241 (.022)	.199 (.007)	.130 (.013)	.268 (.017)
1991	.421 (.010)	.032 (.018)	.150 (.020)	.444 (.008)	.048 (.013)	.155 (.016)
1992	.459 (.010)	.051 (.018)	.140 (.019)	.499 (.007)	.039 (.012)	.127 (.014)
1993	.565 (.010)	.100 (.018)	.207 (.019)	.490 (.007)	-.008 (.012)	.110 (.014)
1994	.592 (.020)	.113 (.033)	.269 (.038)	.516 (.007)	-.044 (.011)	.091 (.014)
1995				.488 (.008)	-.032 (.013)	.128 (.014)
Sample:		101,468			25,715	

Notes: The sample includes men 18-65 with valid schooling variables, excluding men interviewed in the Gulf War quarter for 1991. The table reports selected estimates from a regression of log wages (in 1991 NIS) on a full set of quarterly period effects, annual work-in-Israel (or Jerusalem) effects, annual schooling-group effects, annual age effects, annual effects for residence in an urban area, a single dummy for employment in Jerusalem, and controls for potential experience and potential experience squared. The sample was weighted by CBS sampling weights in the estimation. Standard errors are shown in parentheses.



TABLE 3(CONT.) — WAGE DETERMINANTS

Year	Gaza			West Bank		
	Work in Israel (i)	13-15 years schooling (ii)	16 or more years schooling (iii)	Work in Israel (i)	13-15 years schooling (ii)	16 or more years schooling (iii)
B. No controls for potential experience						
1981	.183 (.013)	.350 (.030)	.382 (.031)	.224 (.009)	.232 (.018)	.463 (.022)
1984	-.040 (.013)	.284 (.024)	.430 (.025)	.052 (.008)	.143 (.015)	.338 (.018)
1987	.239 (.011)	.047 (.022)	.197 (.021)	.192 (.007)	.066 (.012)	.189 (.016)
1991	.413 (.010)	-.008 (.017)	.120 (.020)	.439 (.008)	-.000 (.013)	.089 (.015)
1992	.453 (.010)	.018 (.018)	.110 (.019)	.495 (.007)	-.005 (.011)	.061 (.013)
1993	.564 (.020)	.081 (.018)	.193 (.018)	.489 (.007)	-.048 (.012)	.056 (.013)
1994	.593 (.010)	.094 (.033)	.243 (.038)	.516 (.007)	-.080 (.011)	.044 (.013)
1995				.489 (.008)	-.064 (.013)	.081 (.014)
Sample:		101,468			25,715	

Notes: The sample includes men 18-65 with valid schooling variables, excluding men interviewed in the Gulf War quarter for 1991. The table reports selected estimates from a regression of log wages (in 1991 NIS) on a full set of quarterly period effects, annual work-in-Israel (or Jerusalem) effects, annual schooling-group effects, annual age effects, annual effects for residence in an urban area, and a single dummy for employment in Jerusalem. The sample was weighted by CBS sampling weights in the estimation. Standard errors are shown in parentheses.





TABLE 4 — REFUGEE STATUS AND WAGES

Refugee Status	Gaza			West Bank		
	Without Covariates (i)	With Covariates (ii)	With Covariates (controls for potential experience) (iii)	Without Covariates (i)	With Covariates (ii)	With Covariates (controls for potential experience) (iii)
<i>Resided in Israel in 1948</i>						
1992	-.085 (.026)	-.011 (.030)	-.011 (.030)	-.157 (.026)	-.086 (.024)	-.088 (.024)
1993	-.045 (.027)	-.019 (.030)	-.014 (.030)	-.153 (.029)	-.110 (.027)	-.107 (.027)
1994	.044 (.053)	.188 (.061)	.202 (.061)	-.072 (.028)	-.092 (.025)	-.079 (.025)
1995				-.050 (.034)	-.084 (.031)	-.074 (.030)
<i>Father Resided in Israel in 1948</i>						
1992	-.019 (.013)	-.025 (.011)	-.021 (.011)	-.126 (.010)	-.105 (.009)	-.104 (.009)
1993	-.023 (.014)	-.017 (.011)	-.015 (.011)	-.154 (.011)	-.125 (.009)	-.123 (.009)
1994	.025 (.027)	.007 (.022)	.005 (.022)	-.134 (.010)	-.101 (.009)	-.101 (.009)
1995				-.106 (.012)	-.070 (.010)	-.071 (.010)
Sample:		8,601			54,593	

Notes: The sample includes men 18-65 with valid schooling variables, excluding men interviewed in the Gulf War quarter for 1991. The table reports selected estimates from a regression of log wages (in 1991 NIS) on a full set of quarterly period effects, annual refugee status effects, and covariates which include annual work-in-Israel (or Jerusalem) effects, annual schooling-group effects, annual age effects, annual effects for residence in an urban area, a single dummy for employment in Jerusalem, and controls for potential experience and potential experience squared. The sample was weighted by CBS sampling weights in the estimation. Standard errors are shown in parentheses.



TABLE 5 — REFUGEE STATUS AND EMPLOYMENT

Refugee Status	Gaza			West Bank		
	Without Covariates (i)	With Covariates (ii)	With Covariates (controls for potential experience) (iii)	Without Covariates (i)	With Covariates (ii)	With Covariates (controls for potential experience) (iii)
<i>Resided in Israel in 1948</i>						
1992	-.151 (.016)	-.029 (.021)	-.049 (.020)	-.115 (.014)	-.073 (.015)	-.071 (.014)
1993	-.187 (.017)	-.043 (.021)	-.055 (.020)	-.093 (.015)	-.088 (.015)	-.081 (.015)
1994	-.234 (.034)	-.057 (.043)	-.075 (.041)	-.115 (.014)	-.106 (.014)	-.086 (.014)
1995				-.114 (.017)	-.086 (.017)	-.064 (.017)
<i>Father Resided in Israel in 1948</i>						
1992	-.039 (.010)	-.027 (.010)	-.018 (.009)	-.045 (.007)	-.053 (.007)	-.051 (.006)
1993	-.068 (.009)	-.069 (.009)	-.064 (.009)	-.027 (.006)	-.031 (.006)	-.031 (.006)
1994	-.061 (.018)	-.073 (.018)	-.070 (.017)	-.033 (.006)	-.042 (.006)	-.045 (.006)
1995				-.035 (.007)	-.043 (.007)	-.046 (.007)
Sample:		19,604			117,286	

Notes: The sample includes men 18-65 with valid schooling variables, excluding men interviewed in the Gulf War quarter for 1991. The table reports selected estimates from a regression of employment status on a full set of quarterly period effects, annual refugee status effects, and covariates which include annual schooling-group effects, annual age effects, annual effects for residence in an urban area, and controls for potential experience and potential experience squared. The sample was weighted by CBS sampling weights in the estimation. Standard errors are shown in parentheses.



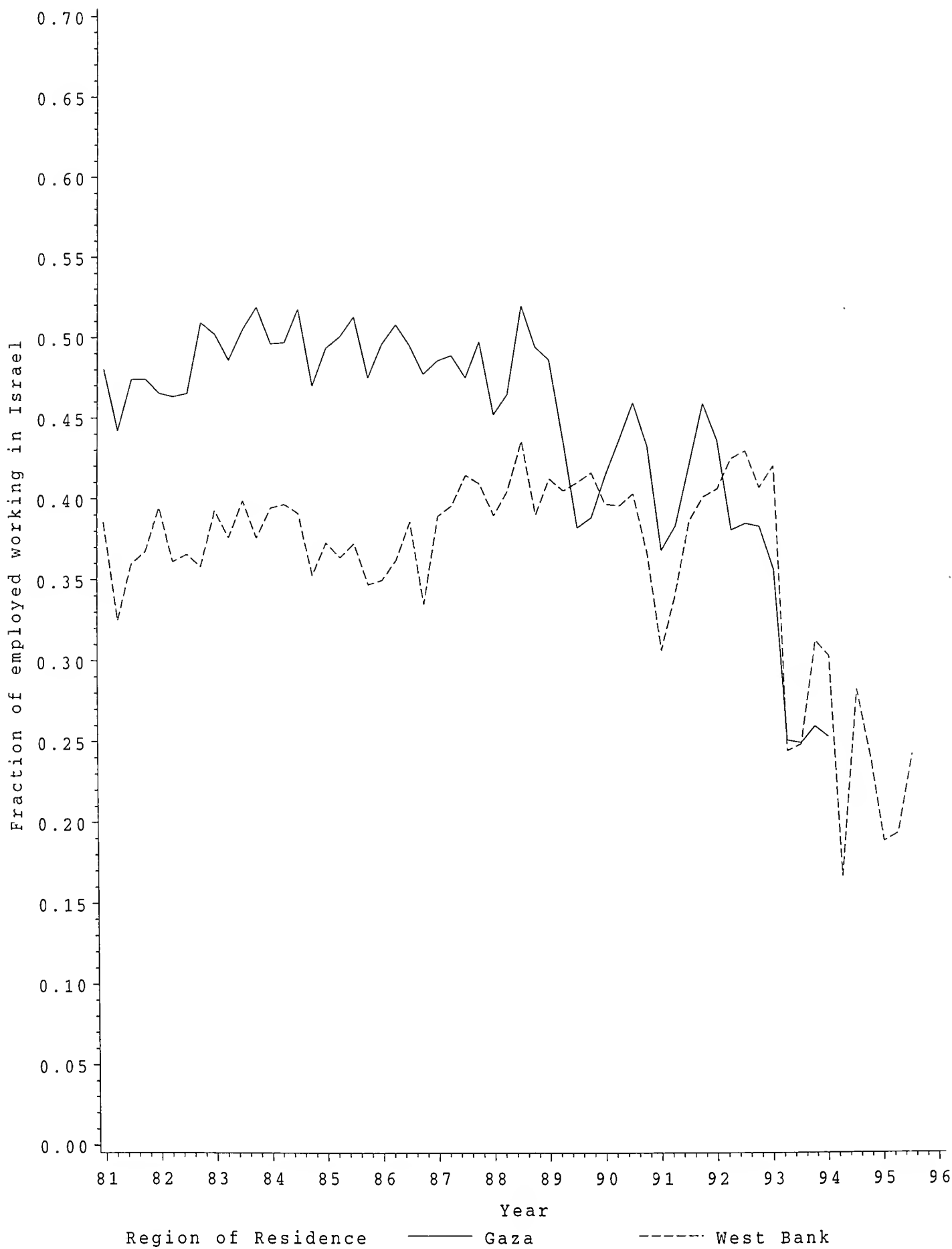


Figure 1. Fraction of employed working in Israel by region



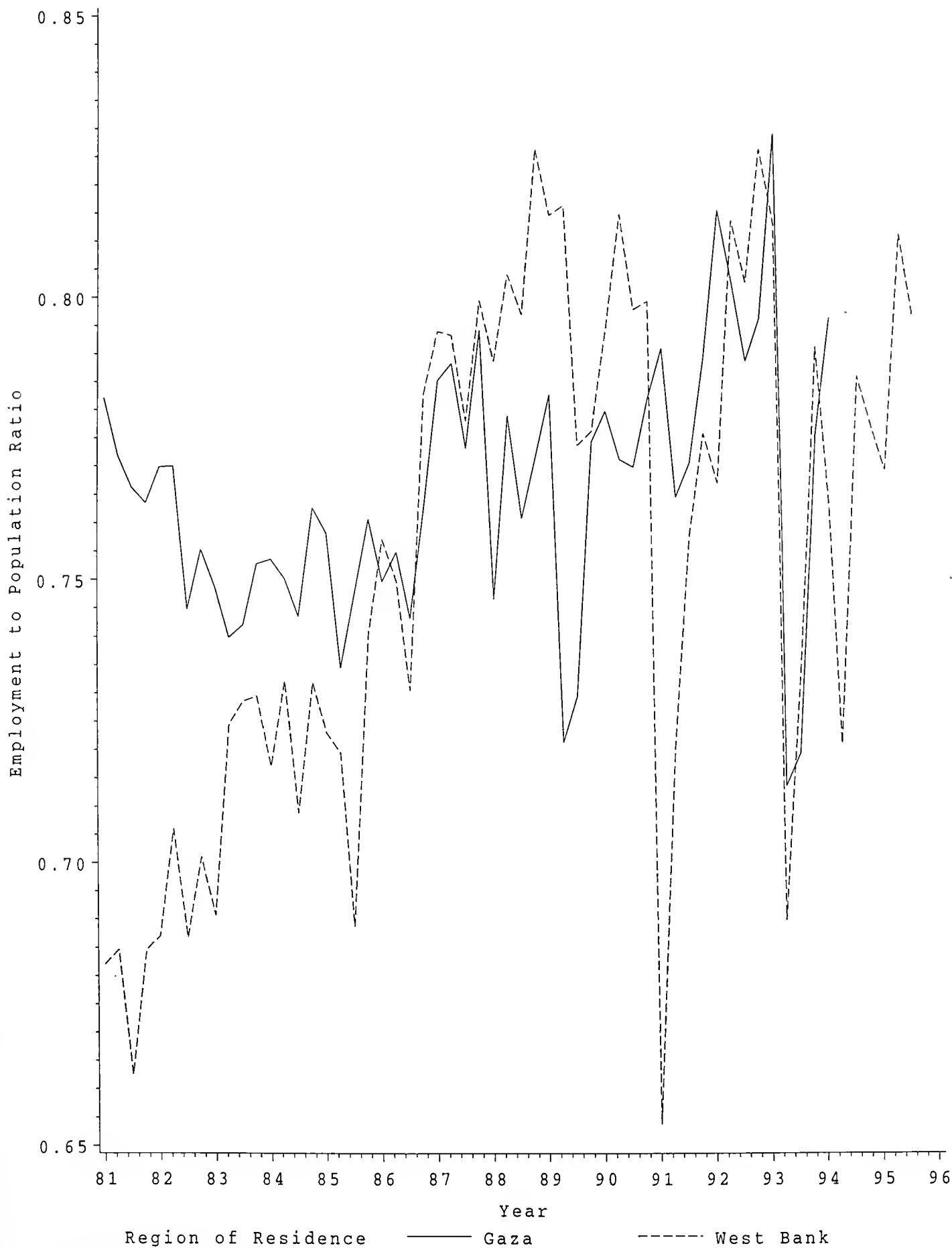


Figure 2. Employment rate by region





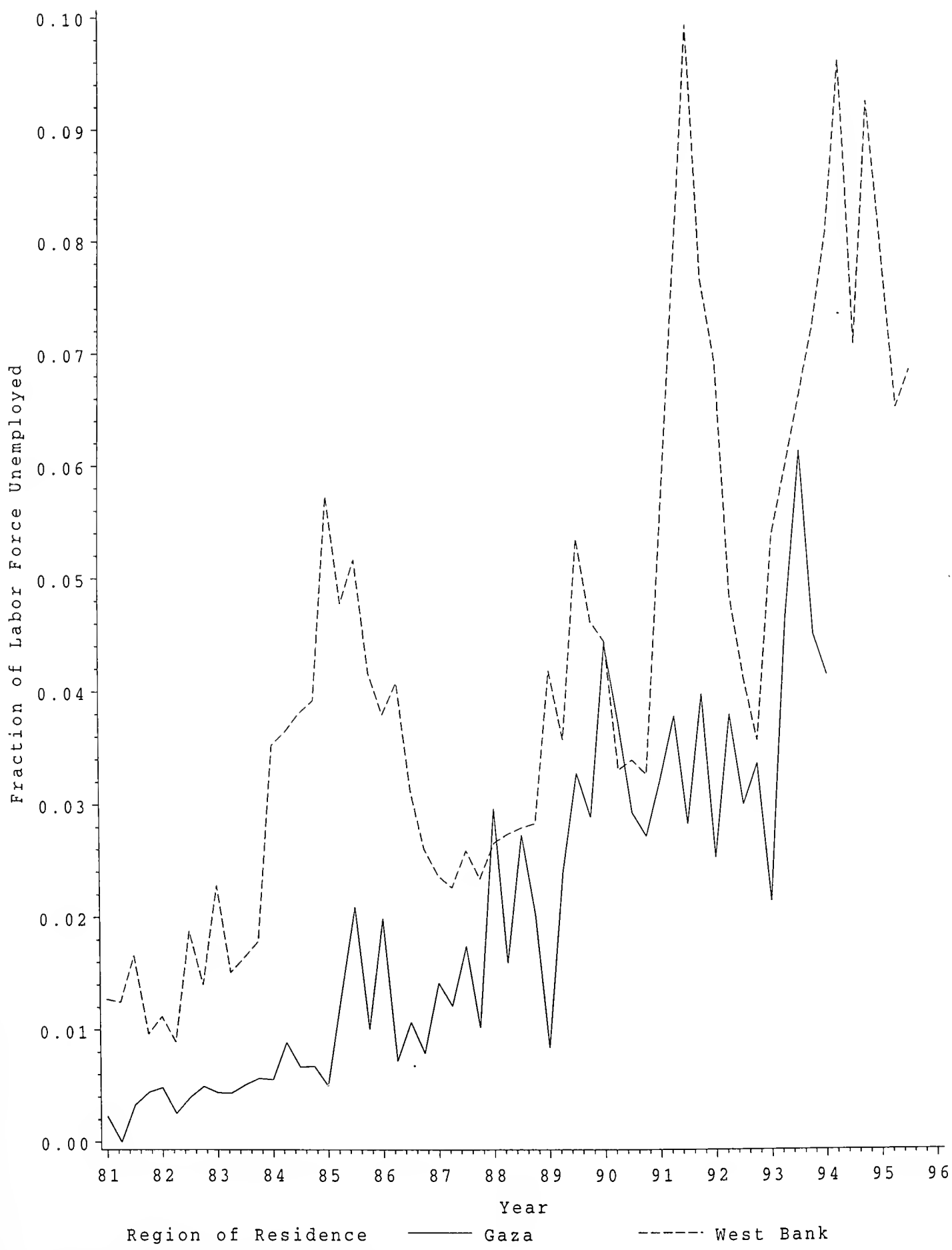


Figure 3. Unemployment rate by region



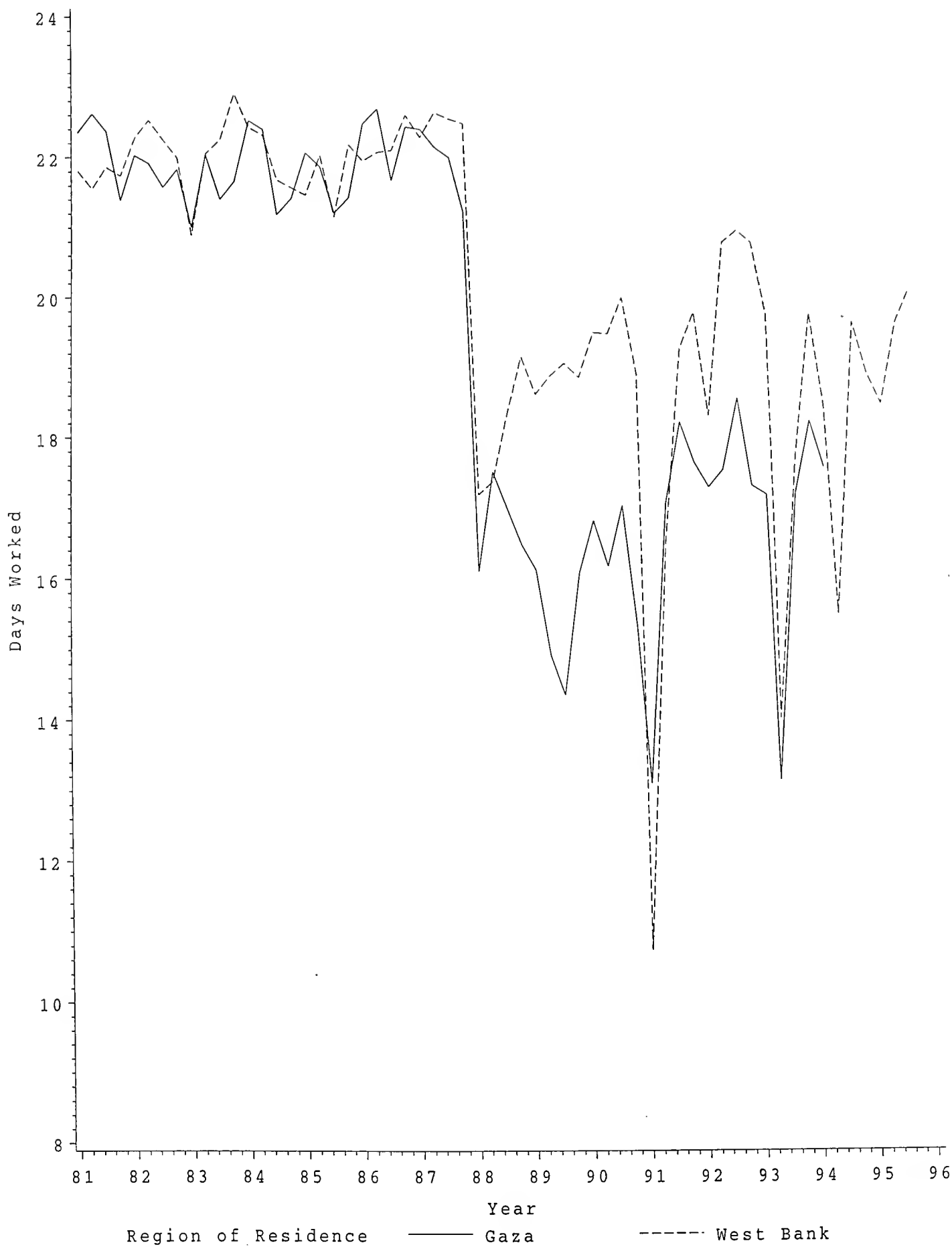


Figure 4. Average days worked by region



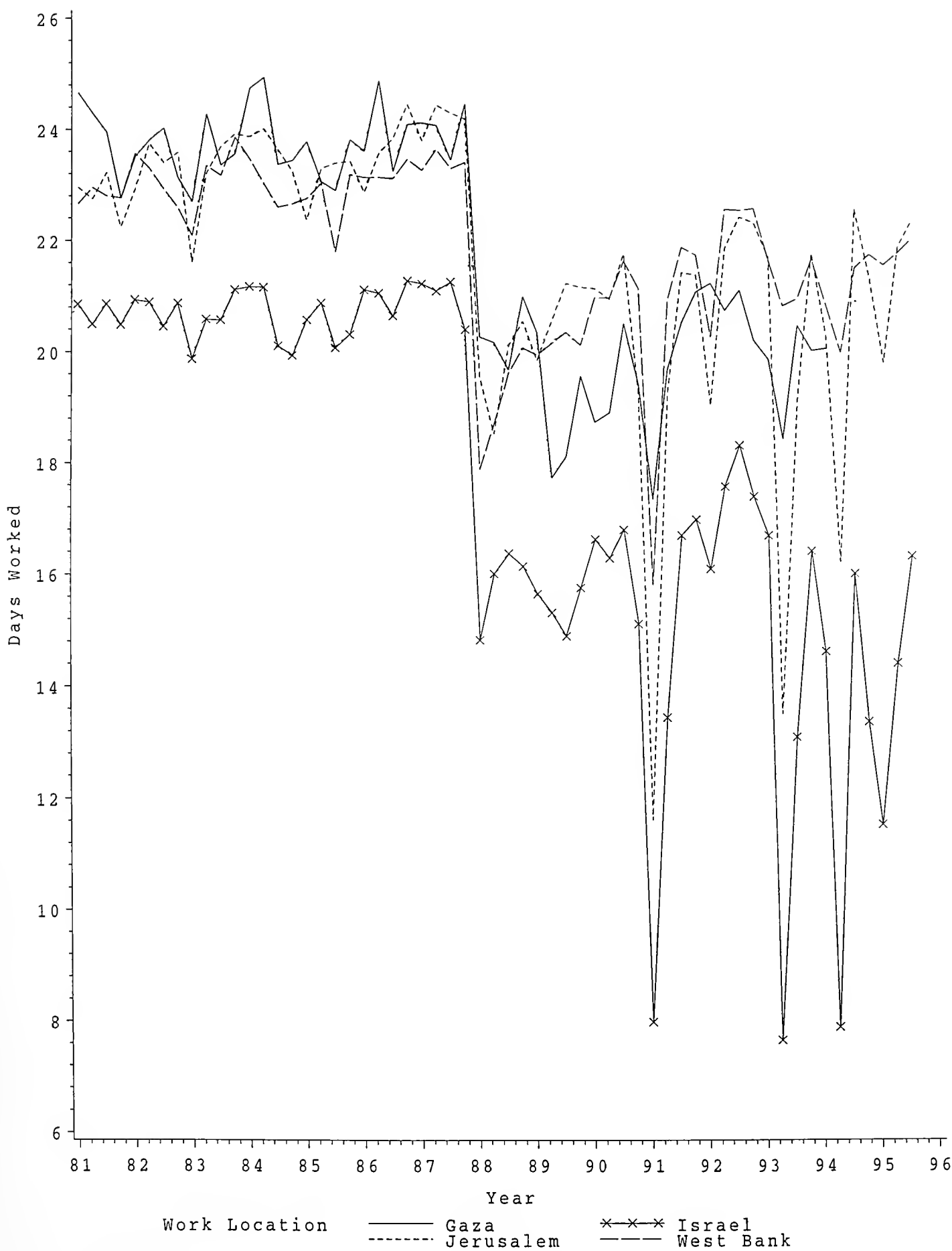


Figure 5. Average days worked by work location



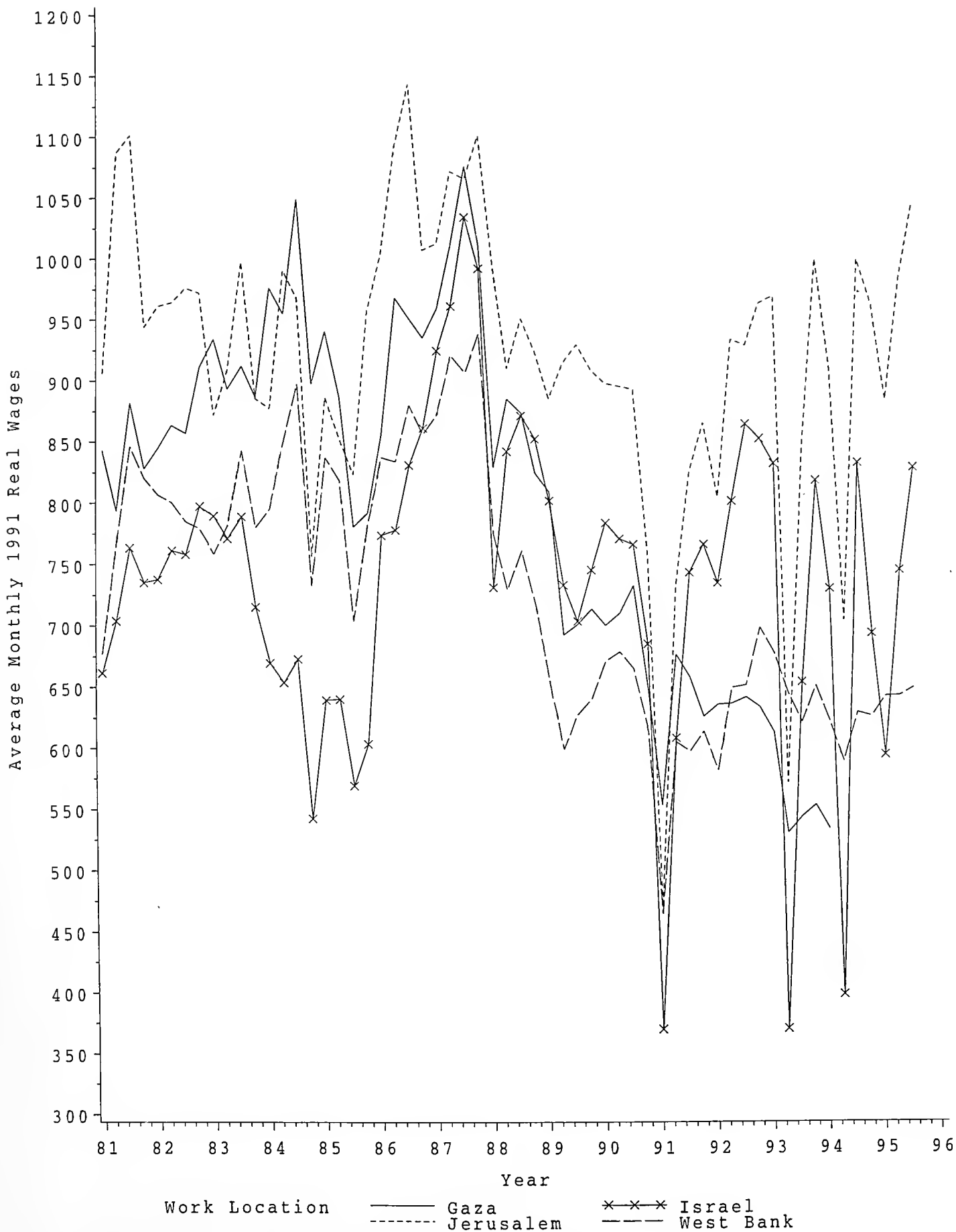


Figure 6. Average monthly wages in 1991 NIS by work location  
Male employees aged 18-64





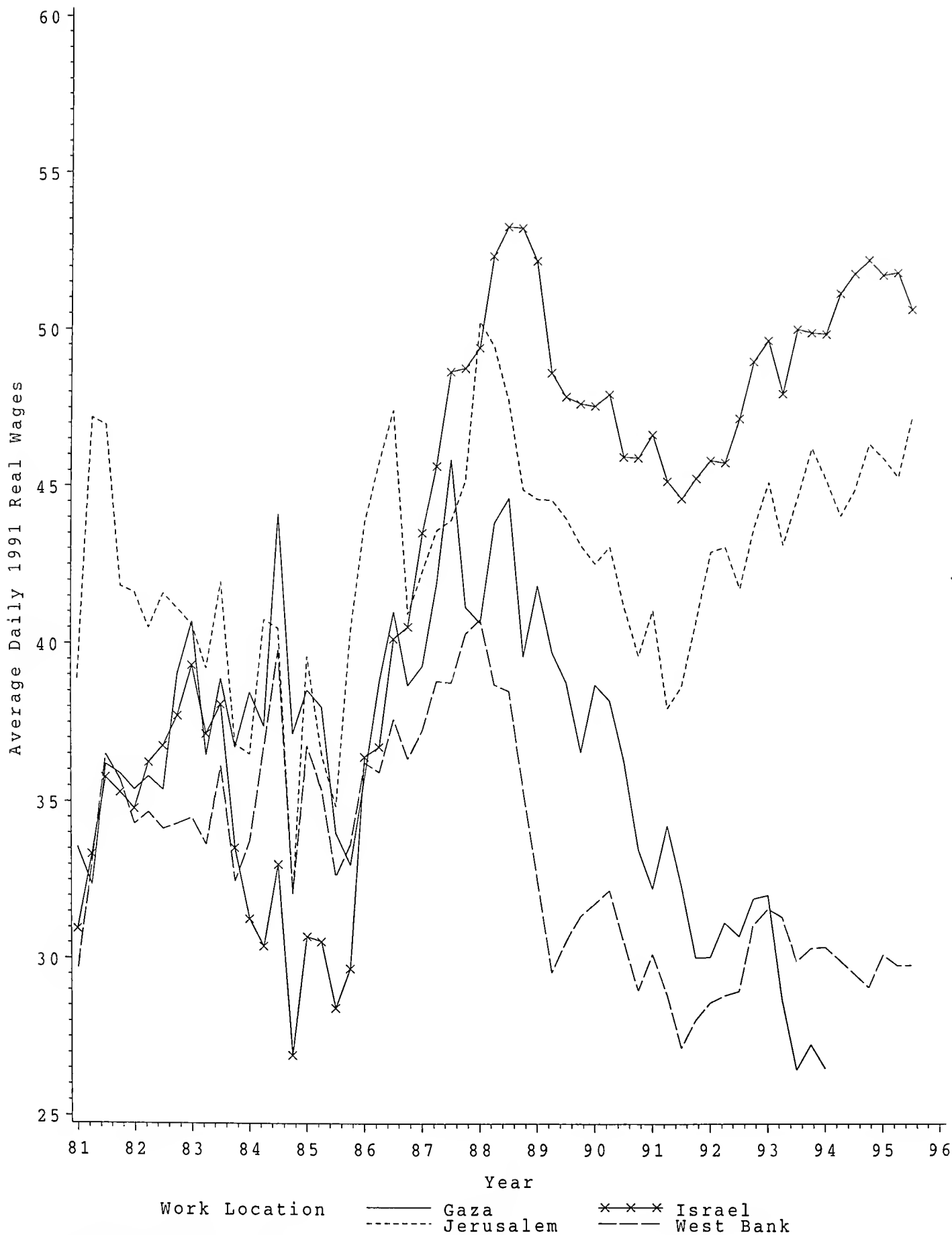


Figure 7. Average daily wages in 1991 NIS by work location  
Male employees aged 18-64

